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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,663	02/20/2004	Egbert Krause	9314.0024	7271
22852	7590	07/14/2005	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			ANDERSON, DENISE BROWN	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/783,663

Applicant(s)

KRAUSE, EGBERT

Examiner

Denise B. Anderson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/7/04 & 3/21/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Amended Claims***

The examiner acknowledges the set of canceled claims (1-8) and has reviewed the amended claims (9-22) forwarded by the applicant via the preliminary amendment filed on 6/7/04.

### ***Drawings***

Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The title of the invention does not comply 37 CFR 1.72(a). The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words, and may not contain more than 500 characters. The title is objected to because it is not descriptive. The following title is suggested: "Interferometric-based Device and Method for Determining Chromatic Dispersion of Optical Components Using a Polarimeter". A new title is required that is clearly indicative of the invention to which the claims are directed. See MPEP § 606.

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The abstract of the disclosure is objected to because of the following informalities: language such as " it is to be possible" and should be revised in accordance with proper idiomatic English. Appropriate correction is required. See MPEP § 608.01(b).

The examiner respectfully suggests that the applicant carefully review the specification for idiomatic and grammatical errors, which may have been inadvertently overlooked. For example, the examiner makes note of the language "is, however, involves" on page 4, lines 21-22 of the specification.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

***Arrangement of the Specification***

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),

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and tables having more than 50 pages of text are permitted to be submitted on compact discs.) Or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

The Office accepted "Microfiche Appendices" until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING (S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A

"Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

***Claim Objections***

Claim 16 is objected to because of the following informalities: applicant uses the term "radiograph" in a way that is not normally tied to its definition. The term

"radiograph" is typically used in reference to x-rays or gamma rays, but the applicant makes claim to a tunable laser in claims 11, 12, 18, and 19. The examiner suggests using the term "irradiate" or one of its synonyms. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 9-22 are rejected.**

**Claims 9, 11, 13, 15, 16, 18, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over VanWiggeren et al (US Patent Application Publication No. 2003/0223073 A1) further in view of Froggatt (US Patent No. 6,856,400).**

As to claims 9 and 16, the applicant claims a radiation source with at least two wavelengths; an interferometer for splitting the radiation source into reference and measurement arms and combining the two arms so that they interfere; a measurement apparatus containing a polarimeter for measuring wavelength-dependent power and polarization changes of the interfered radiation; and an evaluation apparatus for determining the chromatic dispersion of a sample (which lies in the measurement arm of the interferometer) on the basis of the measured power and polarization changes.

In figure 1a, VanWiggeren et al discloses a wavelength-tunable laser 110 that generates an electromagnetic beam of radiation; an interferometer 190 with a splitting device 126 for splitting the radiation into reference 132 and measurement 131 arms, a

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device under test (DUT) in the measurement arm of the interferometer, and a combining device 128 for combining the reference and measurement arms and causing them to interfere; a measurement apparatus containing a polarimeter 170; and a processor 199 that serves as an evaluation apparatus for evaluating the output from photodetectors 171, 172, 173, and 174 to determine the optical parameters of DUT 123 (page 2, right column, paragraph 0023, last four lines). Wavelength-dependent polarization changes are established by connections to polarizers 160, 161, and 162. The detectable optical parameters include chromatic dispersion (page 2, right column, paragraph 0024, line 12).

VanWiggeren et al discloses the ability to change the total power input into the DUT, but does not disclose wavelength-dependent power changes of the interference beam. Froggatt discloses an apparatus and method for characterizing optical devices including dispersion effects, which is the same field of endeavor as VanWiggeren et al. Froggatt further discloses a spectral acquisition system 28 (figure 1) which enables one to obtain optical power versus frequency curves (column 6, lines 32-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of VanWiggeren et al with those of Froggatt for the purpose of more completely characterizing an optical device as Froggatt describes (see column 1, lines 29-32; column 2, lines 3-7; and column 2, lines 58-61).

As to claims 11 and 18, the applicant claims that the radiation source comprises a tunable laser. VanWiggeren et al discloses a tunable laser 110 in figure 1a.

As to claims 13, 15, 20 and 22, the applicant claims the use of Stokes parameters to evaluate the optical device under test (page 4, paragraphs 0028 and 0035).

**Claims 10, 12, 14, 17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over VanWiggeren et al (US Patent Application Publication No. 2003/0223073 A1), Froggatt (US Patent No. 6,856,400) and further in view of admitted prior art.**

As to claims 10 and 17, the applicant claims that two orthogonal polarizations are evaluated with the polarimeter in such a way that power from the reference arm is split into two partial powers of equal intensity. VanWiggeren et al and Froggatt do not disclose the orthogonal polarizations and equal power splitting of the reference arm. The applicant discloses on page 4 of the specification the two orthogonal polarizations and two partial powers of equal intensity (lines 3-6 and 15-16). See also the prior art referenced in figure 3 of the specification. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of VanWiggeren et al and Froggatt with those of the admitted prior art for the purpose of creating a measurement configuration that was able to detect a changing polarization (see specification, page 4, line 8).

As to claims 12 and 19, the applicant claims that the radiation source comprises a tunable laser. VanWiggeren et al discloses a tunable laser 110 in figure 1a.

As to claims 14 and 21, the applicant claims the use of Stokes parameters to evaluate the optical device under test (page 4, paragraphs 0028 and 0035).



### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ruchet (US Patent No. 6,856,398) discloses a method of and apparatus for making wavelength-resolved polarimetric measurements on a device under test. The method uses interferometry, a polarimeter, and determines Stokes parameters. However, the device under test is not incorporated into the interferometer.

Rosenfeldt et al (US Patent No. 6,606,158) discloses a method and apparatus for determination of a property of an optical device using interferometric methods and detecting wavelength dependent polarization and power, but without a polarimeter and using the Jones matrix.

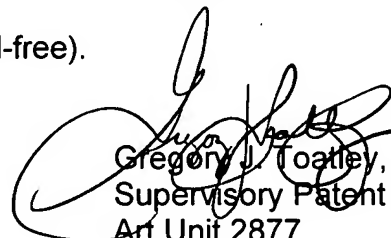
### ***Fax/Telephone Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise B. Anderson whose telephone number is 571-272-8324. The examiner can normally be reached on Mon-Fri (9:30 AM - 6 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gregory J. Toatley, Jr.  
Supervisory Patent Examiner  
Art Unit 2877  
8 July 05

DBA